

* TUBERCULOSIS PROGRAM
REVIEW OF SONORA, MEXICO.
STAGE 2 JANUARY 9-11, 1996

TUBERCULOSIS PROGRAM REVIEW OF SONORA, MEXICO - Stage 2

JANUARY 9-11, 1996

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REVIEW FINDINGS:

Please refer to the report on the Stage 1 "Tuberculosis Program Review of Sonora, Mexico, July 17-19, 1995" for general background on the TB program in Sonora and initial suggestions for program improvement. The findings reported below are organized according to the following topics evaluated for Stage 2 status: livestock movement controls, slaughter surveillance, epidemiologic traces, owner inventory, cattle census, record keeping system, accredited TB-free herds and area testing.

"Quarantine"/livestock inspection stations are part of the livestock movement control system in Sonora. The location of these intrastate, interstate and international (with the U.S.A.) stations are shown in Appendix 1. Various activities occur at the stations depending on their location. These activities include the inspection of paperwork (state entry/exit permit, transit guides, health certificates, tick dipping certificate), inspection of animals and dipping of animals.

A negative tuberculin test is required for cattle entering and then remaining in the state. After entry, these cattle are retested for TB 60 days after the initial test. The same requirements exist (a negative tuberculin test in the state of origin and 60 day retest in Sonora) for cattle transiting Sonora to the U.S.A. from Unapproved Stage 1 Status Consensus Document States. Cattle coming from TB-free herds, those going directly to slaughter and those transiting to other Mexican states are exempt from the tuberculin testing requirements. In the latter two cases, the vehicles transporting the cattle are sealed at the interstate inspection station at the point of entry into Sonora.

Sonora's natural borders, the Gulf of California to the west and the Sierra Madre mountain range to the east along the border with Chihuahua, assist in limiting the cattle entry points into the state. Appendix 2 summarizes the number of cattle entering Sonora in 1995 and the reason for entry.

The six federally-inspected (TIF) and 65 municipal slaughter plants in Sonora slaughter approximately 110,000 and 100,000 head of cattle per year, respectively (Appendix 3). Inspection for tuberculous lesions is occurring at 33 of these plants with two more plants to begin inspection by the end of January 1996. Currently, the plan is to limit inspection to these 35 plants which slaughter 177,720 cattle yearly covering approximately 85% of the cattle slaughtered in the state (Appendix 3). Each of the non-inspected plants slaughters very small numbers of cattle yearly. If a tuberculosis problem is identified at a non-inspected plant an inspector may be assigned in the future. Another option being considered is to educate slaughter house personnel in the non-inspected plants to call a TB campaign supervisor if they observe evidence of a tuberculous lesion. The supervisor could then make arrangements for laboratory submission of the lesion.

Between July 1994 and December 1995, 132,211 head of cattle were inspected for tuberculous lesions at slaughtering establishments (Appendix 4). Routine slaughter surveillance resulted in 431 suspicious tuberculous lesions being submitted to the laboratory for confirmation, yielding a granuloma submission rate of eight routine

slaughter submissions per 2,500 animals slaughtered. Histopathological and/or bacteriological examinations indicated that 24 of these samples were positive for tuberculosis.

Histopathological and bacteriological examinations for tuberculosis, as well as bacilloscopy, are being performed at the State Public Health Laboratory in Hermosillo, Sonora. The laboratory was having some difficulty in obtaining culture media in a timely manner but that problem has been resolved. Bacterial isolates are forwarded to INDRE, the national diagnostic reference institute in Mexico City, for typification.

Of the 24 tuberculosis positive routine slaughter surveillance samples, two cases were traced to the state of Sinaloa. Two other cases were traced to feedlots in Sonora and could not be traced further to the herds of origin. The remaining 20 cases were traced to specific beef herds in Sonora which have been or will be tuberculin tested. These herds are under quarantine and two are scheduled for depopulation.

In 1995, six TB cases were traced to Sonora from Mexican cattle slaughtered in the U.S.A. Eartag numbers were provided for three of these cases. One case was a Mexican bull that went directly to slaughter in the U.S.A. This animal was traced to a ranch in Sonora. Cattle on the ranch were tuberculin tested and were negative. Two more tests will be required and if negative, the herd will be released from quarantine. The adjacent herds will also be tested. The second case was traced to a Sonoran herd owner who reports that this was a purchased animal that did not come from his ranch. There are approximately 40 different sources for this animal with one main suspect source. The main suspect herd will be tested. This case is still under investigation. The third case was traced to the livestock gathering center in Magdalena. This case is also under investigation.

Eartag numbers were not provided for the remaining three cases from the U.S.A. making traceback to a herd of origin unlikely. One case had possible sources from other Mexican states as well as states in the U.S.A.. Another case had 22 possible Sonoran sources. The third case had potential sources from two ranches and three gathering centers in Sonora. Further investigation of this last case will involve review of transit guides.

The estimated number of cattle herds in Sonora consists of 5,599 beef and 212 dairy herds (Appendix 5). The dairy herds are divided into "estabulado" (68 herds) and "rustico" (144 herds) categories. The former are Holstein dairy herds that are typically housed in dairy barns whereas the latter includes small countryside herds (herds having as few as one or two animals) with various breeds of cattle. The cattle inventory is estimated at 1,245,860 head, consisting of 1,196,404 beef and 49,456 dairy animals (11,975 and 37,481 animals in the "estabulado" and "rustico" categories, respectively) (Appendix 6)

The Sonoran state government conducts a yearly cattle census. Beginning in September of each year when herd owners normally gather cattle to work them, the

approximately 470 livestock "brand" inspectors (who issue transit guides required for livestock movement) in the state circulate in their designated cattle zones (each of the 70 municipalities in the state is divided into various numbers of cattle zones) and count herds and cattle. The TB Committee used this work as a base for their census but realized that commingling occurred between some of the 8,000 herds reported by the state. The Committee felt that each commingled group of animals should be considered as one herd. Supervisors from the TB Committee accompanied the livestock inspectors to their cattle zones and updated the state census to achieve the owner census numbers and cattle inventory numbers reported in Appendices 5-6.

Sonora has both a computer and manual record keeping system located in the TB Committee office in Hermosillo and each of the district offices. D-base and Clipper computer programs are used. Summary information from the field test sheet is entered into the computer along with individual information on tuberculin positive animals. Various reports can be generated from this data. Written records are kept on the official silver eartags and tuberculin issued. Written herd records are divided into positive and negative herds which are then filed by district, municipality, beef versus dairy, and alphabetically by the name of the herd owner. Positive herds are also divided into slaughter surveillance or herd test categories, the method by which the positive herd was detected. Records on the issuance of blue export eartags and tuberculin for export testing are kept at the cattlemen's unions.

CONETB (National Commission for the Eradication of Bovine Tuberculosis and Brucellosis) in Mexico City processes the applications for TB-free herd accreditation and reaccreditation. Currently, Sonora has no TB-free accredited herds. The policy to accredit beef herds in Sonora is to have two negative tuberculin tests, 10-12 months apart, of 100% of the herd older than six months of age. Reaccreditation involves retesting 12-14 months later 100% of the herd over 24 months of age. In dairy herds, accreditation requires three negative tests within a year with at least 60-90 days between tests. Reaccreditation requires a retest in 12-14 months of all dairy animals over 24 months of age. In addition to what is done at CONETB, the TB Committee district supervisors in Sonora (currently there are only nine, although there are 11 districts) would check the eartags and inventory on retests for TB-free herd accreditation and reaccreditation to determine compliance with the TB-free requirements. Although Sonora does not require its dairies to be accredited as TB-free, a state policy requires all dairies to undergo yearly tuberculin testing to ensure that only TB-negative herds commercialize milk.

Caudal fold tuberculin area testing has occurred in 5,792 (99.7%) of the estimated 5,811 cattle herds in the state (Appendix 7) (Appendix 5 lists 5,777/5,811 herds or 99.4%). Only 19 herds have not been tested at this time and 10 of these are scheduled to be tested by the end of January 1996. In beef herds, 1,128,412 animals (94%) out of an estimated 1,196,404 head have been caudal fold tuberculin tested once (Appendix 8). In dairy herds 11,218 (94%) and 38,990 (104%) cattle have been tested once out of the estimated 11,975 and 37,481 head in "estabulado" and "rustico" herds, respectively, (Appendices 9-10). Some animals have been tuberculin tested twice. Out of 1,632,274 total caudal fold tests performed, 2,624

caudal fold responses have been reported (Appendix 6) for a caudal fold response rate of 0.16%

Currently there are 56 herds quarantined for TB (Appendix 11). Histopathological examinations have confirmed infection in 21 of these herds. Several infected dairy and beef herds have been or are being depopulated (Appendix 12). Indemnity is only being paid for the dairy animals.

The work plan for 1996 is listed in Appendix 13. Plans for TB include area testing the remaining 19 untested herds, conducting the annual retest of the 68 "estabulado" dairy herds, cleaning up the 56 quarantined herds through test and slaughter of reactors, continuing investigations of the 21 laboratory confirmed tuberculous quarantined herds, continuing epidemiologic investigations of the 24 TB positive Mexican slaughter surveillance cases, achieving slaughter surveillance in 35 plants, supervising export tests on 300,000 cattle, controlling the introduction and testing of cattle entering Sonora from other states and implementing a herd identification system. To aid in traceback, the proposed identification system involves the use of unique herd eartags to identify animals moved out of their herd of origin.

MINOR SUGGESTIONS BASED ON OBSERVATIONS:

1. Continue To Review Tuberculin Test Procedures And Equipment

We observed caudal fold tuberculin injections using a needle with a gauge and length (29 g. and 13 mm.) differing from that specified in the Mexican Official Norm (NOM). The tuberculin was correctly administered intradermally, however. Also, out of 1,632,274 total caudal fold tuberculin tests, only 2,624 (0.16%) responses were reported (Appendix 6). This percentage is lower than the expected percentage for false-positive responses alone. Therefore, monitoring of caudal fold tuberculin testing should be continued to ensure that veterinarians are using the correct procedures and recording any visible or palpable response. The low percentage of caudal fold responders is already being addressed in Sonora. In November 1995, the CONETB coordinator for the state discussed this issue during a presentation given at a State Veterinary College Meeting. Also, this topic has been included in educational bulletins from CONETB which have been distributed in Sonora and other states. Approximately 100% of the tuberculin tests for mobilization and campaign reasons are being monitored by a TB Committee district supervisor with about 65% of the export tests monitored. Comparative cervical and single cervical tests are always performed by federal veterinarians.

2. Improve Slaughter Surveillance

We were pleased with the correlation of animal parts and the thorough inspection occurring at the TIF #62 plant. The municipal plant visited could improve in these areas. Better lighting was also needed in this plant for an adequate inspection.

3. Conduct And Document Thorough Epidemiologic Investigations
More priority should be placed on epidemiologic traces. Intensify efforts to trace beyond feedlots to the herd of origin. Written documentation of the traceback effort should be made. Encourage timely development of the epidemiology form that the Sonorans are currently working on (a modification of the TB form developed by Dr. Mark Schoenbaum for use in the U.S.A.) A standard form would aid in consistency of thorough investigations and help ensure important information was obtained and acted on. Traces to other states should be reported to those states in a timely fashion and, preferably, in writing.
4. Consider National Standardization Of Record Keeping Systems
For ease of use and consistency between states, collaboration might be initiated with CONETB to standardize systems.
5. Issue Written Quarantines Rapidly When Quarantines Are Warranted
In some of the TB cases discussed, a long period of time ensued before the issuance of a written quarantine. Timely written quarantines appear to be occurring at this time and should be encouraged, as well as the quickly administered verbal quarantine.
6. Ensure That Exposed Animals Moved From Known Infected Herds Do Not Expose Other Animals
Tuberculin test-negative exposed animals from known infected herds are being allowed to move out of these herds to approved feedlots and other approved facilities on a case-by-case basis. Sonora requires that the approved facilities containing these animals must be 500 meters from facilities for other animals. These exposed animals have been allowed to inhabit corrals on the same premises as cattle being exported to the U.S.A.. Movement is discouraged to premises occupied by other animals and caution and preventive management factors should be employed if such movement is allowed.

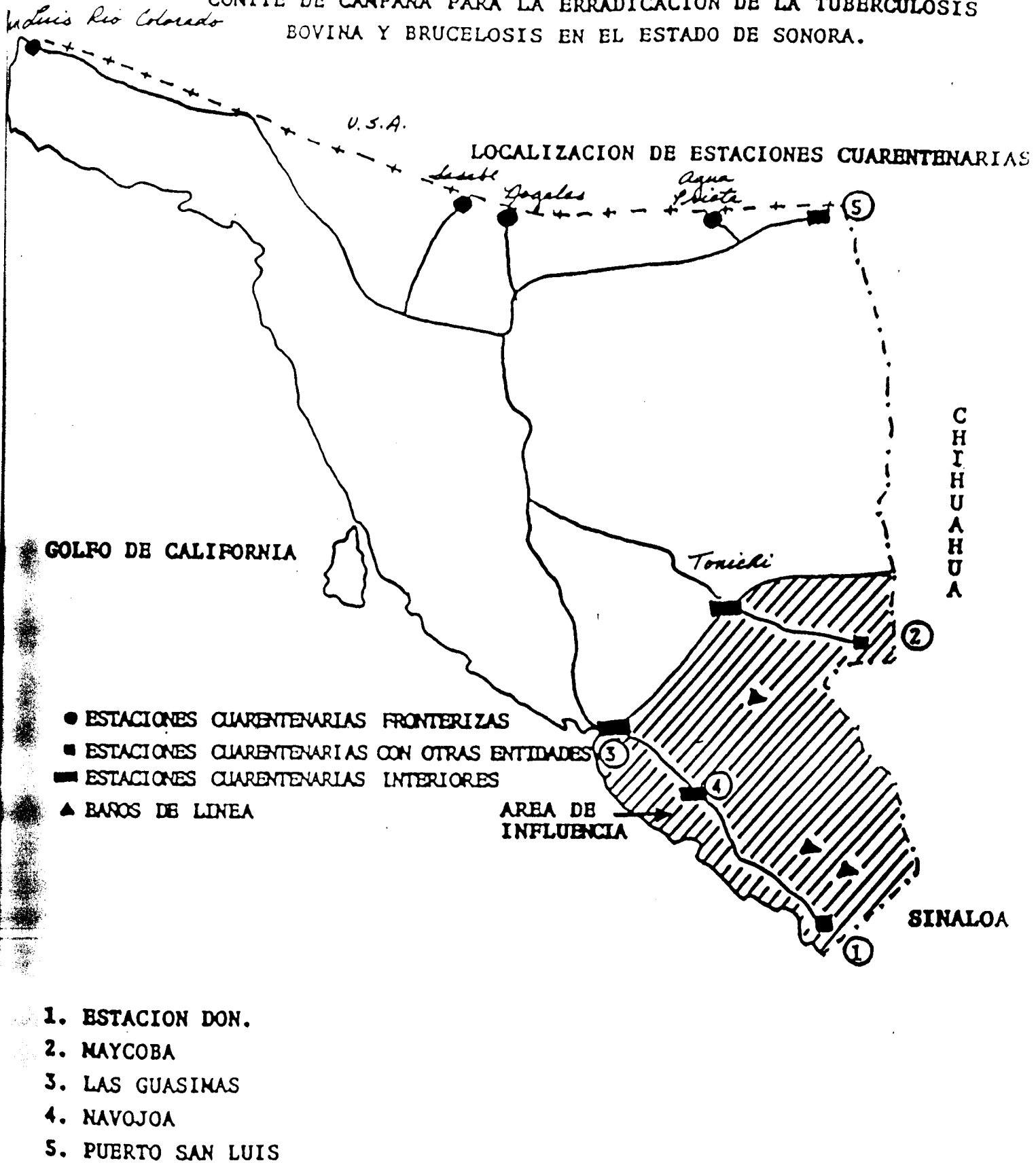
EVALUATION FOR STAGE 2 - ERADICATION PHASE REQUIREMENTS

1. Functioning Livestock Movement Controls? - YES
2. Effective, Reliable Slaughter Surveillance Or Other Surveillance? - YES (slaughter surveillance)
3. Effective Traceback Capability, Conduction Of Epidemiologic Investigations And Testing Of Epidemiologically Traced Herds?- YES
4. Reasonably Complete And Accurate Inventory And Census Of Cattle Owners And Producers, And A Functional Record Keeping System? - YES
5. Capability To Verify And Accredite TB-Free Herds And Monitor These Herds For Compliance With The NOM? - YES
6. TB Area Tested At Least 75% Of Beef And Dairy Cattle Or Achieved Other Adequate Area Surveillance? - YES (area tested)

APPENDICES

(INFORMATION SUPPLIED BY THE SCC)

COMITE DE CAMPAÑA PARA LA ERRADICACION DE LA TUBERCULOSIS
BOVINA Y BRUCELOSIS EN EL ESTADO DE SONORA.



COMITÉ DE CAMPAÑA PARA LA ERRADICACIÓN DE LA TUBERCULOSIS BOVINA Y BRUCELOSIS EN EL ESTADO DE SONORA

TOTAL DE BOVINOS QUE HAN ENTRADO AL ESTADO DE SONORA POR LAS ESTACIONES CUARENTENARIAS

DURANTE EL PERIODO DEL 01 DE ENERO AL 31 DE DICIEMBRE DE 1996

CONCEPTO	ENE.	FEB.	MAR.	ABR.	MAY.	JUN.	JUL.	AGO.	SEPT.	OCT.	NOV.	DIC.	TOTAL
1 Becerros p/Sonora	665	1344	1710	1922	1924	1906	841	917	793	1073	1043	1657	15595
2 Becerros en tránsito	3119	5587	11457	6768	4257	1928	1748	591	0	0	3305	894	39654
3 Vacas p/cría	656	808	42	0	50	0	44	46	19	127	0	12	1802
4 Vacas p/sacrificio	150	30	27	40	0	38	65	0	0	0	0	0	350
5 Vacas en tránsito	103	97	0	0	0	100	0	0	0	0	179	0	479
6 Becerros p/Sonora	0	275	0	0	3	0	230	0	402	244	107	3	1264
7 Becerros en tránsito	1031	2097	3040	2443	1195	736	1323	225	0	0	94	0	12184
8 Toros p/cría	6	46	6	10	10	14	4	31	6	29	573	1	736
9 Toros p/sacrificio	0	3	30	8	130	1397	542	681	338	397	86	239	3851
10 Toros en tránsito	22	3	53	0	187	372	18	13	0	0	190	0	858
11 Novillos p/sacrificio	551	1113	940	458	1199	105	1119	192	0	296	0	0	5973
12 Novillos en tránsito	0	0	346	45	100	0	20	0	0	0	35	0	546
13 Vaquillas p/engorda	0	0	0	0	0	124	0	0	117	44	22	2	309
14 Vaquillas en tránsito	0	0	104	137	50	0	30	0	0	0	783	0	1104
15 Vaquillas p/sacrificio	93	258	1376	217	228	290	85	215	31	272	106	0	3168
T O T A L E S	6396	11869	19131	12048	9331	7010	6869	2911	1706	2482	6622	2808	87873

Del ganado introducido han resultado 2 becerros positivos a Tb. provenientes de Nayarit y 3 vacas de la Paz, B.C.

COMITE DE CAMPANA DE ERRADICACION DE LA TUBERCULOSIS BOVINA Y
BRUCELOSIS EN EL ESTADO DE SONORA

	VOLUMEN DE MATANZA	No. DE RASTROS A INSPECCIONAR	CABEZAS A INSPECCIONAR	% A INSPECCIONAR
T I F	110,000	6	110,000	100
MUNICIPAL	100,000	29	67,720	67.7
TOTAL:	210,000	35	177,720	85

COMITE DE CAMPAÑA DE ERRADICACION DE LA TUBERCULOSIS BOVINA Y BRUCELOSIS EN SONORA

REPORTE DE INSPECCION EN RASTROS ACUMULADO AL 31 DE DICIEMBRE DE 1995

July 94 - December 95

(+ His Topology)
(+ 17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039-1040-1041-1042-1043-1044-1045-1046-1047-1048-1049-1050-1051-1052-1053-1054-1055-1056-1057-1058-1059-1060-1061-1062-1063-1064-1065-1066-1067-1068-1069-1070-1071-1072-1073-1074-1075-1076-1077-1078-1079-1080-1081-1082-1083-1084-1085-1086-1087-1088-1089-1090-1091-1092-1093-1094-1095-1096-1097-1098-1099-1100-1101-1102-1103-1104-1105-1106-1107-1108-1109-1110-1111-1112-1113-1114-1115-1116-1117-1118-1119-1120-1121-1122-1123-1124-1125-1126-1127-1128-1129-1130-1131-1132-1133-1134-1135-1136-1137-1138-1139-1140-1141-1142-1143-1144-1145-1146-1147-1148-1149-1150-1151-1152-1153-1154-1155-1156-1157-1158-1159-1160-1161-1162-1163-1164-1165-1166-1167-1168-1169-1170-1171-1172-1173-1174-1175-1176-1177-1178-1179-1180-1181-1182-1183-1184-1185-1186-1187-1188-1189-1190-1191-1192-1193-1194-1195-1196-1197-1198-1199-1200-1201-1202-1203-1204-1205-1206-1207-1208-1209-1210-1211-1212-1213-1214-1215-1216-1217-1218-1219-1220-1221-1222-1223-1224-1225-1226-1227-1228-1229-1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COMITE DE CAMPANA PARA LA ERRADICACION DE LA TB. BOVINA Y
BRUCELOSIS EN EL ESTADO DE SONORA

AVANCE DE LA CAMPANA Y NIVELES DE PREVALENCIA
DE REACTORES POSITIVOS

HATOS	NUMERO DE HATOS ESTIMADOS	TUBERCULOSIS					BRUCELOSIS		
		No. DE HATOS PROBADOS	No. DE HATOS REACTORES		PORCENTAJE DE PREVALENCIA		NO. DE HATOS PROBADOS	No. DE HATOS REACTORES A LA ITORA	% DE PREVALENCIA
			A.C.	C.LAB.	A.C.	C.LAB.			
⁽¹⁾ DE CAMPO	5,599	⁽²⁾ 5,565	125	17	2.2	0.30	5,563	41	0.73
LECHERO	68								
ESTABULADO		68	44	14	64.7	21.0	68	2	2.9
LECHERO ⁽²⁾									
RUSTICO	144	144	28	5	19.4	3.5	144	-	*
TOTAL	5,811	5,777	197	36	3.4	0.62	5,775	43	0.74

- (1) SE AGREGO EL NUMERO DE HATOS POR TRANSFERENCIA DE HATOS MIXTOS A HATOS DE CARNE.
 (2) SE REDUJO EL NUMERO DE HATOS POR ENCONTARSE EN AREA COMUN.
 (3) NO CONTIENIA 15 HATOS QUE YA FUERON PROBADOS Y QUE LA INFORMACION NO HA SIDO PROCESADA.
 * SE APLICÓ VACUNA CONTRA BRUCELOSIS EN EL VALLE DEL YAGUI Y MAYO.

1991 — DATOS AL 31 DE DICIEMBRE DE 1995.

COMITE DE CAMPAÑA PARA LA ERRADICACION DE LA TB. BOVINA Y
BRUCELOSIS EN EL ESTADO DE SONORA

AVANCE DE LA CAMPAÑA Y NIVELES DE PREVALENCIA
DE REACTORES POSITIVOS

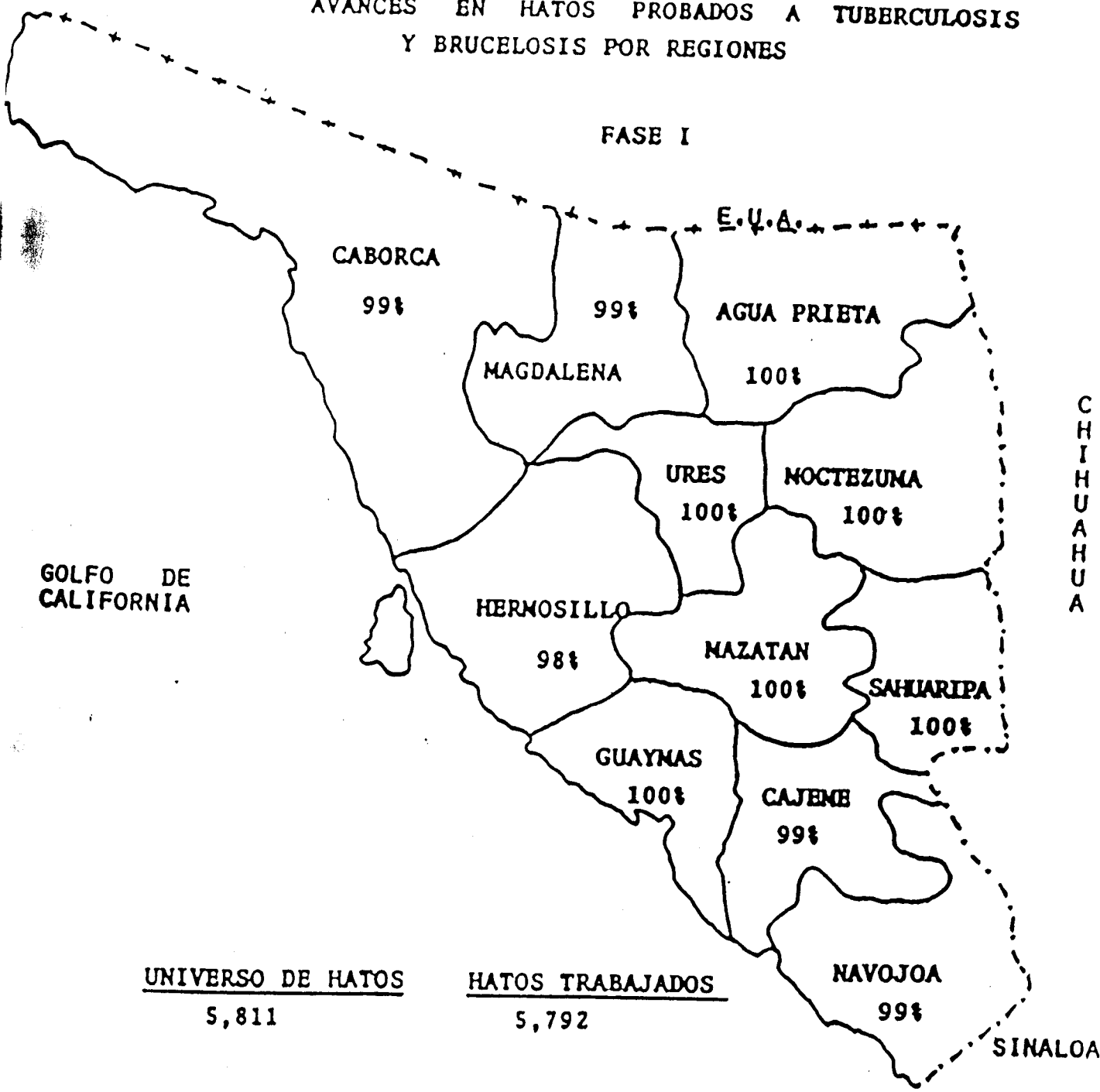
TIPO DE GRUPO	NUMERO DE CAJAS ESTIMADAS	TUBERCULOSIS				BRUCELOSIS			
		No. DE PRUEBAS REALIZADAS	No. DE CAJAS REACTORES		x DE PREVALENCIA	No. DE PRUEBAS REALIZADAS	No. DE CAJAS REACTORES A LA FECHA	x DE PREVALENCIA	
			ESTABULADO	A.C.					
DE CAMPO	1,196,404	1,539,093	1,593		0.14	1,523,718	165	0.013	
LECHERO ESTABULADO	11,975	52,251	796		7.0	48,128	4	0.03	
LECHERO RUSTICO	37,481	40,930	235		0.60	40,048	-	*	
TOTAL	1,245,860	1,632,274	2,624		0.22	1,611,894	169	0.014	

* SE APLICÓ VACUNA CONTRA BRUCELOSIS EN EL VALLE DEL TRUQUE Y NAYO.

DATOS AL 31 DE DICIEMBRE DE 1955.

COMITE DE CAMPAÑA PARA LA ERRADICACION DE LA TUBERCULOSIS BOVINA Y BRUCELOSIS
EN EL ESTADO DE SONORA

AVANCES EN HATOS PROBADOS A TUBERCULOSIS
Y BRUCELOSIS POR REGIONES



AVANCE TOTAL (EN HATOS TRABAJADOS)
AL 31 DE DICIEMBRE DE 1995. 99.7%

SOMORA: COMITE ESTATAL DE LA CAMPANA PARA LA ERRADICACION
DE LA TUBERCULOSIS BOVINA Y BRUCELOSIS

INFORME SOBRE NUMERO DE CABEZAS TRABAJADAS DE GANADO DE CAMPO

DISTRITO DE DESARROLLO RURAL	CABEZAS ESTIMADAS EN EL ESTADO	CABEZAS TRABAJADAS EN CAMPO									
		TUBERCULOSIS					BRUCELOSIS				
		1a. PRUEBA	2a. PRUEBA	REACCIONES a.c.	PRUEBA Lecithina	POSITIVO a.c.	1a. PRUEBA	2a. PRUEBA	POSITIVO	CABEZAS REACT- A LA PRUEBA	PRUEBA Lecithina
139 - OROBONA	123,027	114,527	53,604	50	0.04	18	113,459	51,403	79	14	0.01
140 - MACALEDA	127,392	118,734	41,484	88	0.07	5	120,079	40,967	30	-	-
141 - AGUA PRIETA	111,165	110,614	109,084	3	0.002	0	108,723	82,062	8	-	0
142 - URES	109,683	103,247	12,010	1	0.0009	1	103,479	11,285	5	-	0
143 - MOCTEZUMA	128,626	117,876	56,981	5	0.004	1	119,622	56,813	23	-	0
144 - HERMOSILLO	141,234	133,196	29,982	139	0.10	47	132,496	32,206	193	38	0.02
145 - PIZADAN	108,548	105,611	50,752	2	0.001	0	108,046	52,218	47	-	-
146 - SAHAGUNA	93,067	87,884	31,722	1	0.001	0	83,836	35,597	33	-	0
147 - QUIMBAS	48,181	45,381	6,835	32	0.07	1	45,417	8,236	25	6	0.01
148 - CAJEME	106,354	98,174	12,936	517	0.52	72	98,167	9,230	123	31	0.03
149 - MIQUONA	99,127	93,168	5,271	755	0.82	78	93,184	12,485	773	76	0.08
TOTALES	1'196,404	1'128,412	410,681	1,593	0.14	223	1'126,468	397,250	1,338	165	0.013

ANEXOS AL 31 DE DICIEMBRE DE 1993

SONORA: COMITE ESTATAL DE LA CAMPANA PARA LA
ERRADICACION DE LA TUBERCULOSIS BOVINA
Y BRUCELOSIS

INFORME SOBRE CABEZAS TRABAJADAS DE GANADO LECHERO ESTABULADO

21 DE DICIEMBRE DE 1993

1995

DISTRITOS DE DESARROLLO RURAL	POBLACION ESTIMADA		TUBERCULOSIS						BRUCELOSIS				
	No. de MOTOS	CABEZAS	PRIMERA PRUEBA	X	SEGUNDA PRUEBA	No. de CABEZAS REACTORES		PRIMERA PRUEBA	X	SEGUNDA PRUEBA	POSITIVO	CAPACIDAD CARGA A LA HORA	X DE PREVALENCIA
						A.C.	PREVALENCIA C.C.						
139 CABOPOA	23	2,792	2,913	104	13,345	184	6.3	2,913	104	11,714	44	3	0.10
140 MOCTEZUMA	1	241	241	100	245	-	-	241	100	245	-	-	-
141 AGUA PRIETA	-	-	-	-	-	-	-	-	-	-	-	-	-
142 URES	2	452	452	100	1,470	20	4.4	452	100	992	-	-	-
143 MOCTEZUMA	-	-	-	-	-	-	-	-	-	-	-	-	-
144 HERMOSILLO	16	4,574	3,745	82	15,953	195	4.1	3,745	82	15,441	46	1	0.02
145 ARZATAH	-	-	-	-	-	-	-	-	-	-	-	-	-
146 SANLUIS	-	-	-	-	-	-	-	-	-	-	-	-	-
147 GUAYMAS	5	1,069	1,069	100	3,787	128	11.9	1,069	100	2,711	-	-	-
148 CAJEME	12	1,903	1,903	100	5,912	279	14.6	1,903	100	5,571	45	-	-
149 NAHUJA	9	944	895	90	321	30	3.3	895	90	236	6	-	-
TOTAL	68	11,975	11,218	94	41,033	796	7.0	11,218	94	36,910	141	4	0.03

A.C.: ANORMAL C.C.: CENITAL CORPORA

BONORA: COMITE ESTATAL DE LA CAMPANA PARA LA
ERRADICACION DE LA TUBERCULOSIS BOVINA
Y BRUCELOSIS

INFORME SOBRE CABEZAS TRABAJADAS DE GANADO LECHERO RUSTICO

1 9 9 5 21 DE DICIEMBRE DE 1995

DISTRITOS DE DESARROLLO RURAL		POBLACION ESTIMADA		TUBERCULOSIS								BRUCELOSIS				
	No. DE MATOS	CABEZAS	PRIMERA PRUEBA	X	SEGUNDA PRUEBA	CABEZAS REACCIONES			PRIMERA PRUEBA	X	SEGUNDA PRUEBA	POSITIVO		X DE EQUIVALENCIA		
						A.C.	PRUEBA DE REACCION	C.C.				POSITIVO	QUIZAS REACT A LA PRUEBA			
139 OABOROA	22	961	872	91	167	2	0.72	-	959	99	5	9	-	-		
140 MACALINA	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
141 AGUA PRIETA	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
142 URES	10	576	482	84	56	-	-	-	482	84	56	1	-	-		
143 MOCTEZUMA	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
144 HERMOSILLO	24	1,567	1,437	92	1,461	98	6.8	13	1,437	92	417	-	-	-		
145 NAZARIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
146 SHUARITA	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
147 CUINROS	1	4	4	100	0	2	50.0	2	4	100	-	-	-	-		
148 OJENS	66	19,842	19,842	100	0	27	0.13	27	19,842	100	-	1,862	-	-		
149 MUCUJOA	21	14,531	16,353	112	256	106	0.65	47	16,358	112	488	109	-	-		
TOTAL	144	37,481	38,990	104	1,940	235	0.60	89	39,082	104	966	1,981	-	-		

A.C.= ANORMAL C.C.= COMITAL = SE VACUNO CONTRA BRUCELOSIS POR LO QUE SE LLEVARON LOS MATOS.

COMITE DE CAMPAÑA PARA LA ERADICACION DE LA TUBERCULOSIS BOVINA Y BRUCELOSIS EN EL ESTADO DE SONORA

TUBERCULOSIS

SITUACION AL 31 DE DICIEMBRE DE 1995

Histopatología

TIPO DE GANADO	EXISTENCIA DE HATOS	ACTUALMENTE CUARENTENADOS A TB. <i>at. de TB. Pac</i>	CONFIRMADOS EN LABORATORIO EXISTENTES	PREVALENCIA %
DE CAMPO	5,599	18	11	0.19
LECHERO ESTABULADO	68	15	6	8.8
LECHERO RUSTICO	144	23	4	2.8
TOTAL	5,811	56	21	0.36

DESPOBLACIÓN DE HATOS

Establos Lecheros

Propietario	Establo o Rancho	Municipio	Cabezas
Correa Casas Francisco	San Francisco	Hermosillo	47
Valdez Campoy José A.	Tacupeto	Hermosillo	60
Martínez Corrales Jesús	Santo Niño	Hermosillo	116
López Vázquez Francisco	El Tepeyac	Guaymas	106
León Fragoso Ignacio	San Ignacio	Navojoa	46
Otero Bauman Manuel	Etchoropo	Huatabampo	240
S.C.P. Los Horcones	Los Horcones	La Colorada	47
Ignacio Encinas	La Quinta Emilia	Hermosillo	49
Jorge Espada	Santa Cruz	Guaymas	123
Fernando Mendivil *	Santa Cecilia	Cajeme	26
Hector Mendivil *	S.P.R. Tutuli	Cajeme	17
Subtotal			877

Ganado de Carne

Esquer Heriberto	Tres Marias	Navojoa	2,000
Esquer Heriberto Jr. (e SPR Las Gemelas)	La Tescalama	Quiriego	318
Padilla Zenen	Santa Clara	Nogales	283
Pavlovich Gastón (los compró a la Sra. Mercedes Ancheta)	Tacupeto	Hermosillo	90
Marcos Gallegos	Pozo 19	Empalme	121
Subtotal			2,812
TOTAL			3,689

* Iniciaron sacrificio en Diciembre de 1995.

PROGRAMA DE TRABAJO PARA 1996

- 1.- Probar 19 Hatos para Terminar 100% de las pruebas de Area (Fin Primera Fase de la Campaña).
- 2.- Realizar Prueba Anual en 68 Hatos Lecheros Estabulados.
- 3.- Limpiar mediante Pruebas y Sacrificio de Animales Positivos 56 Hatos Reactores a TB.
- 4.- Limpiar 43 Hatos Reactores a Brucelosis.
- 5.- Terminar programa de Vacunación contra Brucelosis en el Sur de Sonora y proseguir con Vacunación de crías.
- 6.- Continuar 21 Investigaciones en proceso, de hatos confirmados a tuberculosis en laboratorio.
- 7.- Continuar las Investigaciones Epidemiológicas que se originan a partir de 24 muestras confirmadas positivas a tuberculosis por laboratorio y 60 muestras positivas a brucelosis.
- 8.- Pasar de 32 a 35 rastros con servicio de vigilancia de sacrificios.
- 9.- Supervisar pruebas de exportación de 300,000 cabezas.
- 10.- Controlar la introducción y pruebas al ganado procedente de otros Estados.
- 11.- Implementar identificación por hato del ganado para abasto.